

# REPORT DOCUMENTATION PAGE

Form Approved OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE February 1993	3. REPORT TYPE AND DATES COVERED Final Report, 7-20 Feb 1993	
4. TITLE AND SUBTITLE Report on Visit to Armstrong Laboratory, Brooks AFB, San Antonio, Texas, Feb 7-20, 1993			5. FUNDING NUMBERS F6170893W0214	
6. AUTHOR(S) Prof Vladimir Serdiouk				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) IAS Head of Laboratory 2a Nezhdanova Street 103009 Moscow, Russia			8. PERFORMING ORGANIZATION REPORT NUMBER SPC-93-4010	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) EOARD PSC 802 BOX 14 FPO 09499-0200			10. SPONSORING/MONITORING AGENCY REPORT NUMBER SPC-93-4010	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) Describes Professor Serdiouk's visit to Armstrong Laboratory at Brooks AFB, San Antonio, Texas between February 7-20, 1993. Briefed Institute of Automated System's research in creating computer-aided learning systems. Training system INOK was designed to create and use computerized training courses in the process of shaping, securing and checking knowledge in any field, supposing differing levels of subject and language mastery. The technology realized by this system was successfully used for creating the training courses on geography, history, mathematics, chemistry, theory of music, English and other subjects.				
14. SUBJECT TERMS			15. NUMBER OF PAGES 12	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UL	

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)  
Prescribed by ANSI Std. Z39-18  
298-102

**DTIC QUALITY INSPECTED 1**

# REPORT

on the visit to Armstrong Laboratory, AFB Brooks,  
San Antonio, Texas, USA, February 7-20, 1993

I was visiting Armstrong Laboratory on the "Window on Science" program (WOS-93-4010). During my visit I had the opportunity to meet many researchers at the Intelligent Training Branch (AL/HRTI). I made one presentation on the topic "Intelligent Tutoring Systems" at which I reported about Training system INOK. This system was designed to create and use computerized training courses in the process of shaping, securing and checking of knowledge in any field, supposing differing levels of subject and language mastery. Here, language refers to the technical (spoken, written) language of the subject area, as well as computer (programming, query) languages.

After my presentation I had extensive discussion with Dr. Patricia Carlson, Col. William Strickland, Col. Rodger Ballentine, Dr. Jim Fleming, Mr. Charles Swanberg, Mrs. Teri Jacson, Mrs. Carol Horwitz, Dr. Kurt Steuck, Cap. Ai Goodman, Cap. Michael Slaven, Mr. Tony The, Mrs. Melinda Crevoisier, Mr. Keith Brown, Mr. Scott Tucker and others.

A team of HRTI people was organized, members of which decided to try to use the INOK training system. Especially for my visit to Brooks I prepared a training course about the United States (mostly about Geography of the United States). I added to this my formal report the text, which reflect the content (questions and answers) of this course. There were other courses, prepared for my visit in English language, so that the "student" could see the following "menu" to choose the training course:

- U S A ( States, Capitals and Big Cities)
- U S A ( Rivers and Lakes)
- E U R O P E ( States, Capitals and Big Cities)
- A F R I C A ( States, Capital, & Rivers)
- North and South AMERICA ( in Russian )
- C I S (States, Capitals, Rivers, Islands, ets.)
- A S I A - (States, Capitals, Big Cities)
- "B R O O K S" AF BASE (Presentation Course)

19961212 077

After the "student" choosed the course (let say it is the first course "USA (States, Capitals and Big Cities)") he/she saw on the screen the following list of users and had to choose his/her name:

- T O N Y - USA ( States, Capitals and Big Cities)
- K E I T H - USA ( States, Capitals and Big Cities)
- THERESE - USA ( States, Capitals and Big Cities)
- Melinda - USA ( States, Capitals and Big Cities)
- J O A N - USA ( States, Capitals and Big Cities)
- J A C O B - USA ( States, Capitals and Big Cities)
- PATRICIA - USA ( States, Capitals and Big Cities)
- Al Goodman - USA ( States, Capitals and Big Cities)
- Carol - USA ( States, Capitals and Big Cities)
- Scott - USA ( States, Capitals and Big Cities)

The INOK training system store a lot of information about the student during his/her lesson and use stored information to make the training process more efficient. The main feature of the system is that it "press" the student to work, to spend energy, to be active and to mobilize internal resources during the lesson. At the same time the system use very complicated algorithms to save student's time and energy preventing him/her from doing what is not necessary to do.

The results of using the system were impressive. "Students" learned something about USA (some of them also about Europe), but mostly tried to evaluate the "behaviour" of the system. Thier general opinion was that such an approach can really save time and can help to obtain stable knowlege.

A lot of discussions was with AL/HRTI people about internal algorithms of the system, about fields where the system can be used, about technology of creating of training courses.

It was agreed, that the approach, which was demonstrated at the presentation and during the experimental usage of the INOK Training Intelligent system, can be very efficient in case when the training process is well motivated and a lot of information should be learned during short time or certain level of knowledge should be kept during necessary period of time.

Moscow, March 1993.

Vladimir Serdiuk



APPENDIX 1. Seminar AL Brooks AFB, San Antonio, Texas  
February 9, 1993

*Vladimir A. Serdiuk,*

**Institute for Automated Systems (IAS)  
Moscow, Russia**

Located in Moscow, the Institute for Automated Systems specializes in research on applied computer science and telecommunications. Software laboratories of the IAS over the last ten years achieved recognition in Russia and throughout the former Soviet Union as a group capable of sophisticated scientific research as well as having the ability to develop software to commercial level quality and reliability.

For about 10 years a team at the IAS have been working on the problem of creating computer-aided learning systems. The most difficult part of it was theoretical attempts to solve principal problems to avoid constraints related to the fact that didactics is not a science, at least not an exact science. Many principles and criteria were designed to find a way to describe didactic aims and student behavior by parameters, which computer can "understand" and use to make training process more efficient on the basis of special type of "artificial intelligence."

Training system INOK was designed to create and use computerized training courses in the process of shaping, securing and checking of knowledge in any field, supposing differing levels of subject and language mastery. Here, language refers to the technical (spoken, written) language of the subject area, as well as computer (programming, query) languages.

The practice shows that the field of INOK usage is much wider. The technology realized by this system was successfully used for creating the training courses on geography, history, mathematics, chemistry, theory of music, English and other subjects.

Practically, it is a facility for automatization of wide range of didactic processes in many fields of knowledge. The efficiency of automated training processes based on technology which is realized in this complex is provided with the approach to creation of systems of such a class as to adaptive artificial intelligence system of didactic trend.

As compared with other computer-aided learning systems, a new principle in INOK is the use of large information storage capacity in the process of training. This information is about different quantity aspects of studying at the concrete training course and about the time-varying parameter of mastering of this course. The stored didactic information is used by INOK in compliance with multiple algorithms realized for achievement of the main aim, i.e. for the multiple betterment of those sides of training process which are serious obstacle for the majority of trainees.

THE MAIN DIDACTIC PRINCIPLES realized in INOK are as follows:

- (a) active orthographical and syntactic checking of a trainee's knowledge;
- (b) individual process of training with the ability of the description of the individual didactic strategy by the unique parameters set;
- (c) possibility of deep and detailed structuring of the training material including possibility of determination of semantic network for the complex material with the inter-related elements;
- (d) controlled randomization of the didactic information;
- (e) filtration of the training material elements on a basis of the quantity, quality and temporary criteria of a trainee's knowledge. The filtration is capable to economize essentially the trainee's time and energy due to the repetition of the poor assimilated knowledge and optimal return to the elements which are complex or difficult to study or to give the unstable knowledge.

Some of the above-mentioned principles are realized for the first time in practice of developing of automated training systems.

THE INOK SOFTWARE consists of two independent subsystems:

- (a) author subsystems A-INOK, an integrated system for preparation of courseware, including a great number of basic and service subsystems on a base of powerful multi-window text editor;

(b) trainee subsystem T-INOK which employs adaptive artificial intelligence. These functions allow for the collection and processing of the individual didactic data.

THE AUTHOR SUBSYSTEM allows for didactic program development engineers to create new training courses with use of the window technology and programming graphic facilities, to realize deep structuring of training material in compliance with the principles entered into the system, to add and modify the existing training courses, to formalize the training aims and also to receive information of the reference character about the training courses as well as to look over the created training material as it occurs to be given to a trainee. The main feature of the author subsystem and the information technology realized in the frame of INOK is that authors of training courses do not need to have "heavy" computer knowledge. They must have an experience in preparation of usual texts with help of personal computer and must be acquainted with potentialities of linguistic support of INOK, i.e. person-to-computer language (author language) used for training courses creation, which provides transformation of the usual text into the didactic program. In this case the author need not remember author language syntax since the author subsystem has developed facilities of the automatic formation of the service elements of the language in the process of subject dialogue with the author.

TRAINING in the THE INOK system is realized as a process of interpretation of didactic programs written on the mentioned author language. Such an interpretation is performed by the second program component of INOK, i.e. T-INOK or "Trainee subsystem". This system gives an opportunity to a trainee (or instructor) to choose the required training course, to choose or modify the process of training, to familiarize himself with the whole training material, to select the poor mastered, more complex or forgotten material, to check knowledge and experience of a trainee and to evaluate it impartially, to collect statistics for determination of integral evaluation of a trainee's knowledge, to provide automatically the access to the new training material as the previous one has been studied, to output the data to a trainee about his didactic situation. The following training courses were developed using the latest version of INOK:

- English on a basis of very well known in Russia text-book by N.A. Bonk or other text-books (this course is really big);
- English phonetics;
- geography of countries and their capitals;
- USA geography;
- data retrieval system DATA-STAR;
- simple music theory;
- chemistry test for 10-th form of Russian school.

INOK is used with IBM-compatible personal computers with EGA or VGA color monitors. Machines should have a fast hard-disk and not less than 1 MB of RAM memory.

**Text of the training course**  
**"USA (States, Capitals and Big Cities)".**

\*\*\*\*\*

**United States of America.**  
**Names of the States, Capitals and the Biggest Cities.**

\*\*\*\*\* Part 1 Lesson 1 \*\*\*\*\*

**U S A**

Territory - 3602.3 th. of sq. miles  
Population - 248.7 mlns. ( 1990 )  
Administrative division -  
50 States + 1 federal district.  
Official language - English.  
Political system - federal republic.

In what year the Constitution of USA was written ?  
1787

In what year the Constitution of USA come into force ?  
1789

Who was the First President of USA ?  
George Washington

**Information about the State**

Territory - 82,413 sq. miles  
Population - 1,036,500  
Higt Pt. - Borah Peak,  
12,662 ft.

State ?

Idaho

Abbr. for State Idaho ?

ID

The Capital of State Idaho ?

Boise

The biggest city of State Idaho ?

Pocatello

The biggest city of State Idaho ?

Idaho Falls

**Information about the State**

Territory - 55,965 sq. miles  
Population - 2,909,500  
Higt Pt. - (unnamed),  
1,670 ft.

State ?

Iowa

Abbr. for State Iowa ?

IA

The Capital of State Iowa ?

Des Moines

The biggest city of State Iowa ?

Cedar Rapids

**Information about the State**

Territory - 50,766 sq. miles

Population - 4,093,100

Higt Pt. - Cheaha Mt.,  
2,407 ft.

State ?

Alabama

Abbr. for State Alabama ?

AL

The Capital of State Alabama ?

Montgomery

The biggest city of State Alabama ?

Mobile

The biggest city of State Alabama ?

Birmingham

**Information about the State.**

Territory - 570,833 sq. miles

Population - 551,700

Higt Pt. - Mt. McKinley,  
20,320 ft.

State ?

Alaska

Abbr. for State Alaska ?

AK

The Capital of State Alaska ?

Juneau

The biggest city of State Alaska ?

Anchorage

The biggest city of State Alaska ?

Fairbanks

**Information about the State**

Territory - 113,510 sq. miles  
 Population - 3,327,400  
 Higt Pt. - Humphreys Peak,  
 12,663 ft.

State ?

Arizona

Abbr. for State Arizona ?

AZ

The Capital of State Arizona ?

Phoenix

The biggest city of State Arizona ?

Tucson

Information about the State.

Territory - 52,082 sq. miles  
 Population - 2,404,800  
 Higt Pt. - Magazine Mt.,  
 2,753 ft.

State ?

Arkansas

Abbr. for State Arkansas ?

AR

The Capital of State Arkansas ?

Little Rock

The biggest city of State Arkansas ?

Hot Springs

The biggest city of State Arkansas ?

Fort Smith

Information about the State

Territory - 96,988 sq. miles  
 Population - 512,300  
 Higt Pt. - Gannett Peak,  
 13,804 ft.

State ?

Wyoming

Abbr. for State Wyoming ?

WY

The Capital of State Wyoming ?

Cheyenne

The biggest city of State Wyoming ?

Casper

Information about the State.

Territory - 66,512 sq. miles  
 Population - 4,479,300  
 Higt Pt. - Mt. Rainier,  
 14,410 ft.

State ?

Washington

Abbr. for State Washington ?

WA

The Capital of State Washington ?

Olympia

The biggest city of State Washington ?

Seattle

The biggest city of State Washington ?

Spokane

Information about the State:

Territory - 39,700 sq. miles  
 Population - 5,845,100  
 Higt Pt. - White Top,  
 5,530 ft.

State ?

Virginia

Abbr. for State Virginia ?

VA

The Capital of State Virginia ?

Richmond

The biggest city of State Virginia ?

Roanoke

The biggest city of State Virginia ?

Norfolk

Information about the State:

Territory - 54,424 sq. miles  
 Population - 4,834,600  
 Higt Pt. - Timms Hill,  
 1,951 ft.

State ?

Wisconsin

Abbr. for State Wisconsin ?

WI

The Capital of State Wisconsin ?

Madison

The biggest city of State Wisconsin ?

Milwaukee

Information about the State:

Territory - 6,427 sq. miles  
 Population - 1,077,700  
 Higt Pt. - Mauna Kea, 13,796 ft.

State ?

Hawaii

Abbr. for State Hawaii ?

HI

The Capital of State Hawaii ?

Honolulu

Information about the State:

Territory - 58,060 sq. miles  
 Population - 6,124,000  
 Higt Pt. - Brasstown Bald,

4,784 ft.

State ?

Georgia

Abbr. for State Georgia ?

GA

The Capital of State Georgia ?

Atlanta

The biggest city of State Georgia ?

Savannah

The biggest city of State Georgia ?

Macon

#### Information about the State:

Territory - 24,124 sq. miles

Population - 1,951,100

Hght Pt. - Spruce Knob,  
4,860 ft.

State ?

West-Virginia (Abbr.- WV)

The Capital of State West Virginia ?

Charleston

The biggest city of State West Virginia ?

Huntington

#### Information about the State:

Territory - 55,646 sq. miles

Population - 11,663,200

Hght Pt. - Charles Mound,  
1,235 ft.

State ?

Illinois

Abbr. for State Illinois ?

IL

The Capital of State Illinois ?

Springfield

The biggest city of State Illinois ?

Chicago

The biggest city of State Illinois ?

Rockford

\*\*\*\*\* Part 2 Lesson 1 \*\*\*\*\*

U S A

Territory - 3602.3 th. of sq. miles

Population - 248.7 mlns. ( 1990 )

Administrative division -

50 States + 1 federal district.

Official language - English.

Political system - federal republic.

#### Information about the State:

Territory - 35,936 sq. miles

Population - 5,571,900

Hght Pt. - (unnamed),  
1,257 ft.

State ?

Indiana

Abbr. for State Indiana ?

IN

The Capital of State Indiana ?

Indianapolis

The biggest city of State Indiana ?

Fort Wayne

The biggest city of State Indiana ?

Gary

#### Information about the State

Territory - 156,297 sq. miles

Population - 27,080,800

Hght Pt. - Mt. Whitney,  
14,491 ft.

State ?

California

Abbr. for State California ?

CA

The Capital of State California ?

Sacramento

The biggest city of State California ?

Los Angeles

The biggest city of State California ?

San Francisco

The biggest city of State California ?

San Diego

#### Information about the State

Territory - 81,783 sq. miles

Population - 2,483,900

Hght Pt. - Mt. Sunflower,  
4,039 ft.

State ?

Kansas

Abbr. for State Kansas ?

KS

The Capital of State Kansas ?

Topeka

The biggest city of State Kansas ?

Wichita

The biggest city of State Kansas ?

Kansas City

#### Information about the State



Territory - 39,674 sq. miles  
 Population - 3,777,600  
 Higt Pt. - Black Mt.,  
 4,145 ft.

State ?  
 Kentucky  
 Abbr. for State Kentucky ?  
 KY  
 The Capital of State Kentucky ?  
 Frankfort  
 The biggest city of State Kentucky ?  
 Louisville  
 The biggest city of State Kentucky ?  
 Lexington

#### Information about the State:

Territory - 103,598 sq. miles  
 Population - 3,300,100  
 Higt Pt. - Mt. Elbert,  
 14,433 ft.

State ?  
 Colorado  
 Abbr. for State Colorado ?  
 CO  
 The Capital of State Colorado ?  
 Denver  
 The biggest city of State Colorado ?  
 Pueblo  
 The biggest city of State Colorado ?  
 Colorado Springs

#### Information about the State

Territory - 44,520 sq. miles  
 Population - 4,547,000  
 Higt Pt. - Driskill Mt.,  
 535 ft.

State ?  
 Louisiana  
 Abbr. for State Louisiana ?  
 LA  
 The Capital of State Louisiana ?  
 Baton Rouge  
 The biggest city of State Louisiana ?  
 New Orleans

#### Information about the State

Territory - 79,548 sq. miles  
 Population - 4,292,700  
 Higt Pt. - Eagle Mt.,  
 2,301 ft.

State ?  
 Minnesota

Abbr. for State Minnesota ?  
 MN  
 The Capital of State Minnesota ?  
 St. Paul  
 The biggest city of State Minnesota ?  
 Minneapolis  
 The biggest city of State Minnesota ?  
 Rochester  
 The biggest city of State Minnesota ?  
 Duluth

#### Information about the State:

Territory - 47,234 sq. miles  
 Population - 2,668,400  
 Higt Pt. - Woodall Mt.,  
 806 ft.

State ?  
 Mississippi  
 Abbr. for State Mississippi ?  
 MS  
 The Capital of State Mississippi ?  
 Jackson

#### Information about the State:

Territory - 68,945 sq. miles  
 Population - 5,149,300  
 Higt Pt. - Taum Sauk Mt.,  
 1,772 ft.

State ?  
 Missouri  
 Abbr. for State Missouri ?  
 MO  
 The Capital of State Missouri ?  
 Jefferson City  
 The biggest city of State Missouri ?  
 Kansas City  
 The biggest city of State Missouri ?  
 St. Louis

#### Information about the State:

Territory - 56,959 sq. miles  
 Population - 9,222,900  
 Higt Pt. - Mt. Arvon,  
 1,979 ft.

State ?  
 Michigan  
 Abbr. for State Michigan ?  
 MI  
 The Capital of State Michigan ?  
 Lansing  
 The biggest city of State Michigan ?  
 Grand Rapids  
 The biggest city of State Michigan ?

# Detroit

## Information about the State:

Territory - 145,388 sq. miles  
Population - 841,700  
Higt Pt. - Granite Peak,  
12,799 ft.

State ?

Montana

Abbr. for State Montana ?

MT

The Capital of State Montana ?

Helena

The biggest city of State Montana ?

Billings

## Information about the State:

Territory - 30,995 sq. miles  
Population - 1,182,400  
Higt Pt. - Mt.Katahdin,  
5,268 ft.

State ?

Maine

Abbr. for State Maine ?

ME

The Capital of State Maine ?

Augusta

The biggest city of State Maine ?

Portland

## Information about the State:

Territory - 9,838 sq. miles  
Population - 4,486,300  
Higt Pt. - Sugar Loaf Mt.,  
1,281 ft.

State ?

Maryland

Abbr. for State Maryland ?

MD

The Capital of State Maryland ?

Annapolis

The biggest city of State Maryland ?

Baltimore

## Information about the State:

Territory - 76,639 sq. miles  
Population - 1,624,600  
Higt Pt. - (unnamed),  
5,426 ft.

State ?

Nebraska

Abbr. for State Nebraska ?

NE

The Capital of State Nebraska ?

Lincoln

The biggest city of State Nebraska ?

Omaha

## Information about the State:

Territory - 109,895 sq. miles  
Population - 963,900  
Higt Pt. - Boundary Peak,  
13,143 ft.

State ?

Nevada

Abbr. for State Nevada ?

NV

The Capital of State Nevada ?

Carson City

The biggest city of State Nevada ?

Las Vegas

The biggest city of State Nevada ?

Reno

\*\*\*\*\* Part 3 Lesson 1 \*\*\*\*\*

U S A

Territory - 3602.3 th. of sq. miles

Population - 248.7 mlns. ( 1990 )

Administrative division -

50 States + 1 federal district.

Official language - English.

Political system - federal republic.

## Information about the State:

Territory - 47,379 sq. miles  
Population - 17,979,600  
Higt Pt. - Mt.Marcy,  
5,344 ft.

State ?

New York (Abbr.- NY)

The Capital of State New York ?

Albany

The biggest city of State New York ?

New York

The biggest city of State New York ?

Syracuse

## Information about the State:

Territory - 121,336 sq. miles  
Population - 1,494,200  
Higt Pt. - Wheeler Peak,  
13,161 ft.

State ?

New Mexico (Abbr.- NM)

The Capital of State New Mexico ?

Santa Fe  
The biggest city of State New Mexico ?  
Albuquerque

Information about the State:

Territory - 41,004 sq. miles  
Population - 10,837,300  
Higt Pt. - Campbell Hill,  
1,550 ft.

State ?

Ohio

Abbr. for State Ohio ?

OH

The Capital of State Ohio ?

Columbus

The biggest city of State Ohio ?

Cleveland

The biggest city of State Ohio ?

Akron

The biggest city of State Ohio ?

Dayton

Information about the State:

Territory - 68,656 sq. miles  
Population - 3,360,400  
Higt Pt. - Black Mesa,  
4,973 ft.

State ?

Oklahoma

Abbr. for State Oklahoma ?

OK

The Capital of State Oklahoma ?

Oklahoma City

The biggest city of State Oklahoma ?

Tulsa

Information about the State:

Territory - 96,187 sq. miles  
Population - 2,726,800  
Higt Pt. - Mt.Hood,  
11,239 ft.

State ?

Oregon

Abbr. for State Oregon ?

OR

The Capital of State Oregon ?

Salem

The biggest city of State Oregon ?

Portland

Information about the State:

Territory - 44,892 sq. miles

Population - 11,953,900

Higt Pt. - Mt.Davis,  
3,213 ft.

State ?

Pennsylvania

Abbr. for State Pennsylvania ?

PA

The Capital of State Pennsylvania ?

Harrisburg

The biggest city of State Pennsylvania ?

Pittsburgh

The biggest city of State Pennsylvania ?

Philadelphia

Information about the State:

Territory - 69,299 sq. miles  
Population - 701,200  
Higt Pt. - White Butte,  
3,506 ft.

State ?

North Dakota (Abbr.- ND)

The Capital of State North Dakota ?

Bismarck

The biggest city of State North Dakota ?

Fargo

Information about the State:

Territory - 48,843 sq. miles  
Population - 6,386,600  
Higt Pt. - Mt.Mitchell,  
6,643 ft.

State ?

North Carolina (Abbr.- NC)

The Capital of State North Carolina ?

Raleigh

Information about the State:

Territory - 41,154 sq. miles  
Population - 4,852,500  
Higt Pt. - Clingmans Dome,  
6,643 ft.

State ?

Tennessee

Abbr. for State Tennessee ?

TN

The Capital of State Tennessee ?

Nashville

The biggest city of State Tennessee ?

Memphis

The biggest city of State Tennessee ?

Information about the State:

Territory - 262,015 sq. miles

Population - 16,738,100  
 Higt Pt. - Guadalupe Peak,  
 8,749 ft.

State ?  
 Texas  
 Abbr. for State Texas ?  
 TX  
 The Capital of State Texas ?  
 Austin  
 The biggest city of State Texas ?  
 Houston  
 The biggest city of State Texas ?  
 San Antonio  
 The biggest city of State Texas ?  
 Dallas

#### Information about the State:

Territory - 54,157 sq. miles  
 Population - 11,740,600  
 Higt Pt. - (unnamed),  
 345 ft.

State ?  
 Florida  
 Abbr. for State Florida ?  
 FL  
 The Capital of State Florida ?  
 Tallahassee  
 The biggest city of State Florida ?  
 Jacksonville  
 The biggest city of State Florida ?  
 Origen  
 The biggest city of State Florida ?  
 Tampa  
 The biggest city of State Florida ?  
 Miami

#### Information about the State:

Territory - 75,956 sq. miles  
 Population - 721,100  
 Higt Pt. - Harney Peak,  
 7,242 ft.

State ?  
 South Dakota (Abbr.- SD)  
 The Capital of State South Dakota ?  
 Pierre  
 The biggest city of State South Dakota ?  
 Sioux Falls  
 The biggest city of State South Dakota ?  
 Rapid City

#### Information about the State:

Territory - 30,207 sq. miles  
 Population - 3,436,400

Higt Pt. - Sassafras Mt.,  
 3,560 ft.

State ?  
 South Carolina (Abbr.- SC)  
 The Capital of State South Carolina ?  
 Columbia  
 The biggest city of State South Carolina ?  
 Charleston

#### Information about the State:

Territory - 82,076 sq. miles  
 Population - 1,704,200  
 Higt Pt. - Kings Peak,  
 13,528 ft.

State ?  
 Utah  
 Abbr. for State Utah ?  
 UT  
 The Capital of State Utah ?  
 Salt Lake City  
 The biggest city of State Utah ?  
 Provo

#### \*\*\*\*\* Part 4 .Lesson 1 \*\*\*\*\*

#### U S A

Territory - 3602.3 th. of sq. miles  
 Population - 248.7 mlns. ( 1990 )  
 Administrative division -  
 50 States + 1 federal district.  
 Official language - English.  
 Political system - federal republic.

#### Information about the State:

Territory - 9,273 sq. miles  
 Population - 544,000  
 Higt Pt. - Mt. Mansfield,  
 4,364 ft.

State ?  
 Vermont  
 Abbr. for State Vermont ?  
 VT  
 The Capital of State Vermont ?  
 Montpelier  
 The biggest city of State Vermont ?  
 Burlington

#### Information about the State

Territory - 1,933 sq. miles  
 Population - 630,100  
 Higt Pt. - Soutyhwood,  
 327 ft.

State ?

Delaware

Abbr. for State Delaware ?

DE

The Capital of State Delaware ?

Dover

The biggest city of State Delaware ?

Wilmington

#### Information about the State

Territory - 4,872 sq. miles

Population - 3,212,000

Hight Pt. - Bear Mt.,  
2,355 ft.

State ?

Connecticut

Abbr. for State Connecticut ?

CT

The Capital of State Connecticut ?

Hartford

The biggest city of State Connecticut ?

Bridgeport

The biggest city of State Connecticut ?

New Haven

#### Information about the State

Territory - 7,826 sq. miles

Population - 5,876,000

Hight Pt. - Mt. Greylock,  
3,491 ft.

State ?

Massachusetts

Abbr. for State Massachusetts ?

MA

The Capital of State Massachusetts ?

Boston

The biggest city of State Massachusetts ?

Worcester

The biggest city of State Massachusetts ?

Springfield

#### Information about the State

Territory - 7,468 sq. miles

Population - 7,687,300

Hight Pt. - High Point,  
1,803 ft.

State ?

New Jersey (Abbr.- NJ)

The Capital of State New Jersey ?

Trenton

The biggest city of State New Jersey ?

Atlantic City

The biggest city of State New Jersey ?

Newark

#### Information about the State

Territory - 8,992 sq. miles

Population - 1,025,100

Hight Pt. - Mt. Washington,  
6,279 ft.

State ?

New Hampshire (Abbr.- NH)

The Capital of State New Hampshire ?

Concord

The biggest city of State New Hampshire ?

Manchester

#### Information about the State

Territory - 1,054 sq. miles

Population - 980,500

Hight Pt. - Durfee Hill,  
805 ft.

State ?

Rhode Island (Abbr.- RI)

The Capital of State Rhode Island ?

Providence

The biggest city of State Rhode Island ?

Newport

#### Information about the district.

Territory - 63 sq. miles

Population - 620,000

Hight Pt. - (unnamed),  
400 ft.

Federal district ?

District of Columbia (Abbr.- DC)

The Capital of United States of America ?

Washington